

HOW PERPETRATOR RELATIONSHIPS AND SEXUAL ASSAULT CHARACTERISTICS
AFFECT SURVIVOR WELLNESS OUTCOMES

BY

KATHRYN LORETTE RHOADES

THESIS

Submitted in partial fulfillment of the requirements
for the degree of Master of Science in Educational Psychology
in the Graduate College of the
University of Illinois Urbana-Champaign, 2021

Urbana, Illinois

Master's Committee:

Assistant Professor Robyn Gobin
Assistant Professor Chris Napolitano
Assistant Professor Yan Xia
Clinical Assistant Professor Lisa Kinderman
Clinical Associate Professor M Lydia Khuri

ABSTRACT

Previous research indicates that adverse wellness outcomes among sexual assault (SA) survivors may be linked SA context (e.g., relationship to perpetrator and sexual assault characteristics). However, previous studies examining SA context have produced mixed results regarding its impact on wellness, particularly when examining the effect of survivor-perpetrator relationships and perpetrator sex. Using data from the Behavioral Risk Factor Surveillance Survey (BRFSS), this study examined the effect of perpetrator relationships (*former partner, current partner, stranger, relative, friend*) and SA characteristics (*SA type, survivor sex, perpetrator sex*) on *general health (GH)*, *mental health (MH)*, *physical health (PH)*, *health-related quality of life (HRQL)*, and *missed days of work (MDW)* among sexual assault survivors ($N=1,477$). A path analysis revealed several direct and indirect pathways. More severe SA was directly and indirectly associated with worse GH, MH, PH, and MDW. Male perpetrator sex resulted in worse MH and PH (direct effect) and worse HRQL (indirect effect) while female perpetrator sex was directly associated with worse HRQL. Being a male survivor was indirectly associated with worse HRQL and MDW. Results of this study suggest that survivor-perpetrator relationships and SA characteristics matter for understanding survivor's wellness. Future studies and interventions that acknowledge SA context may be useful for bolstering survivor recovery and effective treatment planning.

ACKNOWLEDGMENTS

First, I would like to acknowledge my entire Counseling Psychology program. The support and kindness I have received from everyone has made my graduate school experience incredible. I would like to especially acknowledge my cohort because they have assisted me through tough times with endless help and friendship. Thank you, Amir, Briana, Jisoo, and Nimot.

Next, I would like to acknowledge my advisor Dr. Robyn Gobin for supporting me throughout my research process. Dr. Gobin took me on as a student even though I was outside her department, and I am grateful for all her mentorship and kindness throughout these past few years. I would also like to particularly thank Dr. Yan Xia for mentoring me throughout my statistical analysis. Completing an independent study with him was one of the best learning experiences I have had in graduate school. His expertise was critical to completing this thesis and I am deeply thankful for the support he gave over the past year.

Finally, I would like to acknowledge the mentors, friends, and family who helped me during this process including Dr. Lisa Kinderman, Dr. Lydia Khuri, Dr. Chris Napolitano, Dr. Carolyn Aibel, Michelle Pebole, Kate Donaldson, Adam Taggart, Erin Budesheim, Karen Rhoades, Steve Rhoades, and Callie Rhoades. You have all helped me become the graduate student, young professional, and person I am today. Thank you.

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CHAPTER 1: LITERATURE REVIEW & PURPOSE OF STUDY

The Impact of Sexual Assault

Sexual assault is a public health problem that affects approximately 43.6% of women and 24.8% of men in the United States. Of these survivors, 21.3% of women and 2.6% of men have survived either attempted or completed rape (Centers for Disease Control and Prevention, 2018, p. 2-3). Previous research has indicated that sexual assault can have wide-ranging impacts on a survivor's life including significant effects on a survivor's physical and mental health.

Physical Health Effects

Research over the past several decades has shown a clear link between sexual assault and physical health concerns. Golding et al. (1997) found that survivors of sexual assault had 1.63 times the odds of reporting poorer subjective health compared to non-assaulted individuals. Waigandt et al. (1990) found that sexually assaulted women were more likely to report poorer health compared to non-assaulted women. Assaulted women were also more likely to make visits to a healthcare professional, have more illness symptoms, have more symptoms related to reproductive physiology, and engage in more negative health behaviors (e.g., smoking, substance use, less exercise). Survivors have also been more likely to report chronic disease (diabetes, arthritis, and physical disability), chronic pain (headaches, fibromyalgia, facial and back pain), and a variety of somatic symptoms (gastrointestinal, cardiopulmonary, neurological, sexual, and reproductive) compared to non-assaulted women (Golding, 1994; Golding, 1999). In a study of 1,228 older women, women with a history of rape were associated with twice the rate of asthma and higher rates of ulcers, sexually transmitted infections, and cervical dysplasia compared to non-assaulted women (Sachs-Ericsson et al., 2014).

Some of the largest reported physical health concerns for survivors, particularly women, involve issues with the sexual and reproductive organs. Golding (1999) cited several studies that show the association between sexual assault and chronic pelvic pain, menstrual pain and irregularity, pelvic inflammatory disease, gynecological surgery, multiple yeast infections, sexually transmitted infections, and sexual dysfunction. A later review found that among female survivors, adult and adolescent sexual assault was significantly associated with gynecological concerns including vaginal and vulvar discharge, abnormal menstruation, dysmenorrhea, postcoital bleeding, dyspareunia, cervical motion tenderness, uterine and adnexal tenderness, abnormal vaginal and rectal bleeding, hematuria, sexually transmitted infections, and pelvic inflammatory disease (Wadsworth & Records, 2013).

Mental Health Effects

The most known, and arguably the most studied, health outcome after sexual assault is the development of posttraumatic stress disorder (PTSD) (Dworkin et al., 2017). Rothbaum et al. (1992) conducted a 12-week longitudinal study on PTSD development in attempted or completed rape survivors. The study revealed that 94% of survivors met the criteria for PTSD one week after their respective assaults as determined by the DSM-III-R. At the end of the 12-week study, 47% of survivors maintained the necessary criteria for a PTSD diagnosis. Breslau et al. (1998) found that the probability of developing PTSD after a rape was as high as 49.0% from a sample of more than 2,000 men and women. The chance of PTSD development was as high as 23.7% for other forms of sexual assault. As noted by other researchers reviewing Breslau et al. (1998)'s study, these traumatic sexual assaults accounted for a greater proportion of PTSD development compared to other forms of trauma measured in the original study (Domino et al., 2020). PTSD has been found to partially mediate the relationship between sexual assault and survivors' self-

reported physical health. This indicates trauma may have an important role in overall wellness post-assault (Eadie et al., 2008).

In addition to PTSD, sexual assault has been related to mental health outcomes such as fear, anxiety, depression, suicidality, and substance abuse (Blayney & Read, 2018; Bryant-Davis, et al., 2010; Campbell et al., 2009). In a longitudinal study of 2,435 male and female college students, sexual assault was a risk factor for the development of depression and lowered sexual self-esteem in both genders (Krahé & Berger, 2017).

Factors of Development

Although the connection between sexual assault and adverse health outcomes is well-documented, it remains unclear why some survivors develop worse health than others. Thus, researchers are still discovering what influences health outcomes post-assault. One emerging research area is examining how perpetrator relationships and sexual assault characteristics influence health outcomes. As outlined in the following sections there is evidence that perpetrator relationships can have varied effects on wellness. Additionally, sexual assault characteristics within these relationships such as type of sexual assault, perpetrator sex, and survivor sex may influence the associations between perpetrator relationships and wellness.

Understanding the Role of Perpetrator Relationships

An important part of understanding sexual assault is examining how the survivor's relationship with their perpetrator affects their experience and recovery. Approximately 80-90% of sexual assault survivors know their perpetrators (Karjane et al., 2005 as cited in Ayala et al., 2018). Sexual assault is an inherent betrayal of the survivor's personal space and right to safety. Thus, sexual assault can be seen as a betraying act. However, when a survivor is previously familiar with their attacker there may be an added layer of trauma due to a betrayal of trust.

Betrayal trauma theory, introduced by Dr. Jennifer Freyd, is the idea that “traumas vary in the degree to which they involve betrayal stemming from victim-perpetrator relationship” (Goldsmith et al., 2012, p. 548). High or more betrayal trauma has been significantly associated with more mental health symptoms, more physical health symptoms, higher chance of nonadherence to medical treatments, less attachment security, and less trust in healthcare systems/providers (Edwards et al., 2012; Freyd et al., 2005; Goldsmith et al., 2012; Klest et al., 2019; Ullman, 2007). Thus, it is key to understand how a survivor’s relationship to their perpetrator plays a role in their experience because some survivors, especially those in dependent relationships (e.g., intimate partners, parents), may experience compounded trauma affecting their health.

Studies of childhood sexual abuse (CSA) survivors found that those experiencing high betrayal trauma displayed greater PTSD symptoms, suicide attempts, anger, depression, panic attacks, and anxiety compared with low betrayal survivors. Some high betrayal survivors also reported a greater feeling of emotional closeness to their perpetrator before and after the abuse but with more negative social reactions to their sexual assault disclosure (Edwards et al., 2012; Ullman, 2007). Additionally, female survivors of military sexual assault (MSA), a form of high betrayal sexual trauma, have shown an increased risk of gynecological, urological, gastrointestinal, pulmonary, neurological, and cardiovascular problems as well as PTSD, depression, and substance abuse. Women who do develop PTSD after MSA are also more likely to be depressed, have anxiety, and have eating disorders compared to their male counterparts (Lutwak & Dill, 2013).

A study of 140 female adults and adolescents in South Africa found that while 59.3% of women knew their perpetrator, women whose perpetrator was a stranger had a lower likelihood

of displaying depressive symptoms post-assault. Authors posited this was likely due to, “the attribution of responsibility and blame, as well as possibly a sense of betrayal and broken trust by intimate partners or people known to the survivor” (Abrahams et al., 2013, p. 291-292). They noted that survivors were likely to get more support and empathy if the perpetrator was a stranger which could affect their level of depressive symptoms.

However, this conclusion needs further study. In their study’s literature review, Ayala et al. (2018) cited previous studies have also found that both male and female survivors have received less blame for acquaintance rape than stranger rape. They noted that survivor-blame may come from the societal expectation that individuals, especially women, should avoid risky scenarios, and since engaging with an acquaintance is not supposed to present a risk, there should be greater understanding for the survivor. However, results from their own study did not find changes in survivor or perpetrator blame when considering the perpetrator was an acquaintance or a stranger. Furthermore, recent studies have found that survivor-perpetrator relationships were not significantly related to the development of PTSD symptoms or other psychological distress symptoms (Blayney & Read, 2018; Domino et al., 2020).

There is some evidence that although many assaults are committed by known perpetrators, sexual assault committed by strangers may lead to worse mental health outcomes. A previous study showed that those attacked by strangers had a greater association with post-assault fear, anxiety, and PTSD (Blayney & Read, 2018). A recent meta-analysis revealed that survivors assaulted by strangers are associated with a higher risk of psychopathology (Dworkin et al., 2017). Thus, a greater understanding is needed of how survivor-perpetrator relationships are associated with wellness outcomes in survivors.

Understanding the Influence of Sexual Assault Characteristics

Type of Sexual Assault

Sexual assault is often used as an umbrella term for a variety of unwanted sexual acts perpetrated against the survivor. Thus, the type of sexual assault experienced can vary in characteristics such as different sexual acts, the involvement of force/violence, or whether penetration occurred. In a study with data from 1991 to 1995 ($n = 2,582$), the most common sexual assaults for women involved penile penetration of the vagina (50% of cases), fondling of the survivor's breasts (30%), digital penetration of the vagina (24%), fondling of the genitals (20%), mouth on the survivor's breasts (17%) and cunnilingus of the survivor (12%). For men the most common assaults included fondling of the genitals (30%) and fellatio of the survivor (16%) (Green et al., 2001).

There is some evidence that the type of sexual assault may play a role in the development of adverse health outcomes. For example, in a previously cited study, males who experienced attempted unwanted intercourse or experienced attempted and completed unwanted intercourse were likely to experience poorer mental health, poorer life satisfaction, activity limitations, and lower emotional or social support. However, for men who had experienced completed unwanted intercourse, the only associated adverse health outcome was activity limitations (Choudhary et al., 2010).

There is also evidence that the sexual severity of the assault may affect health outcomes. Although it is important to note that sexual severity is subjective to the survivor's experience, in the existing literature it is generally accepted that unwanted sexual contact and attempted rape are considered less severe than an experience of completed rape (where assaults are typically more sexually invasive or injurious). Additionally, experiencing more assaults as well as more

types of sexual assault is generally considered more severe than experiencing one sexual assault. In a study examining sexual assault severity among women, it was found that the more severe a woman's experience, the more likely she is to develop posttraumatic stress symptoms and more health difficulties (Eadie et al., 2008). Other studies have also found that more severe sexual assault has been associated with higher prevalence of gynecological symptoms, fibromyalgia, and headaches (Golding, 1999). A history of sexual assault was linked to an increased risk of arthritis and breast cancer in older female survivors; this risk increases if they survived multiple sexual assaults over their lifetime (Stein & Barrett-Connor, 2000). However, the number of studies available is limited and indicates that further research is needed to understand the effects of sexual assault type on health outcomes.

Survivor and Perpetrator Sex

While many sexual assaults are perpetrated against women by men, sexual assault can be perpetrated and experienced by any gender. A study of the National Incident Based Reporting System using data from 2001-2005, found that men are also the most likely to be perpetrators in cases of male sexual assault (Choudhary et al., 2012). However, due to the acceptance of rape myths in U.S. culture, there is a particularly strong stigma against men who are assaulted by other men. As noted by Ayala et al. (2018),

“Men who disclose information about being sexually assaulted may be labeled weak or [gay] if sexually assaulted by a male, and if assaulted by female, men are likely to receive criticism from peers for not wanting to give consent, not wanting to participate in sexual activities, in the first place, or not being able to defend themselves.” (p. 99)

The investigators acknowledged that male survivors generally received less sympathy and more blame, and that sexual assault is seriously underreported due to societal beliefs about

vulnerability and masculinity. A study of men who survived MSA has shown that when men perceive the assault as contradictory to their masculinity or identity it can contribute to the development of psychological effects (Schuyler et al., 2017).

As a result, few studies have focused on health outcomes for male survivors. However, available studies indicate that there may be gender differences in health outcomes for male and female survivors. A study using U.S. data from 2005 examined gender differences in health outcomes of sexual assault survivors. Women who were victimized before the last 12 months of data collection demonstrated poor health status, poor mental health, lower life satisfaction, activity limitations (due to physical, mental, or emotional problems), smoking, and binge drinking. Women who were victimized within 12 months of data collection reported poor mental health, lower life satisfaction, activity limitations, and binge drinking. Comparatively, men who were victimized prior to the last 12 months of data collection, reported lower life satisfaction and activity limitations while men victimized within the last 12 months were more likely to smoke. This study demonstrated that women were more likely to show greater vulnerability to poor health outcomes and that these relationships are likely to persist over time (Choudhary et al., 2008). A later study focused on male survivors found that men who reported any sexual victimization were associated with poor mental health, poor life satisfaction, activity limitations, and infrequent emotional or social support (Choudhary et al., 2010).

A recent study of MSA survivors found that female MSA survivors were more likely to report clinically significant suicidal ideation as well as greater PTSD symptoms, depression symptoms, alcohol-related problems, and drug abuse problems than women who did not have a history of assault. Male survivors were more likely to report clinically significant suicidal ideation than male veterans without a history of assault. Importantly, for male survivors, any

history of sexual assault, whether in a military or civilian setting, was associated with greater depression and PTSD symptoms compared to male veterans without a history of assault (Newins et al., 2020). Schuyler and colleagues (2017) found that male MSA survivors had approximately four times the odds of reporting both physical and psychological health symptoms compared to male veterans who had not been assaulted. Female MSA survivors reported two times the odds of physical health symptoms, three times the odds of depressive symptoms, and almost seven times the odds of probable PTSD compared to non-assaulted veteran women. Both male and female survivors were at increased risk for adverse health behaviors (e.g., taking unnecessary health risks, driving while intoxicated, taking unnecessary life risks, using tobacco).

While there are notably fewer studies, there is some evidence that perpetrator sex could also impact a survivor's wellness. Ayala et al. (2018) found that female perpetrators are perceived as more likable regardless of survivor gender, which could impact social responses to survivor disclosure. In another study of male survivors, it was found across different types of sexual assault, female perpetrators were more likely to be current or former intimate partners while male perpetrators were more likely to be parents, stepparents, or strangers (Choudhary et al., 2010). Thus, the difference in relationships relating to perpetrator sex may contribute to the survivor's interpretation and experience of the assault which could affect their health (e.g., depression, self-esteem). Due to the scarcity of previous research, more study is needed on how perpetrator sex influences the association between survivor-perpetrator relationships and wellness outcomes.

Summary

While previous research indicates that sexual assault context may play a significant role in the development of adverse wellness, this evidence remains mixed or needs further

examination. Although studies examining betrayal trauma theory and survivor-perpetrator relationships have linked closer perpetrator relationships to worse health outcomes, other studies have found assaults by strangers to result in worse wellness. More clarification is needed on which survivor-perpetrator relationships are associated with more severe adverse effects across different areas of survivor wellness. Additionally, while the literature has been fairly consistent in associating more severe assault with worse wellness, sexual assault characteristics such as survivor sex and perpetrator sex need further study. Regarding survivor sex, there is some evidence of wellness differences in male and female survivors but more studies examining male survivors are needed. Finally, at the time of this study, we were unable to locate any targeted investigations of the effect of perpetrator sex on survivors' health across a variety of domains. Thus, a study examining effects of perpetrator sex on different areas of wellness would be highly beneficial to the field of sexual assault research.

Present Study

This study attempts to provide further information on how survivor-perpetrator relationships and the sexual assault characteristics of those relationships affect wellness in survivors across a multitude of wellness outcomes. To the knowledge of this investigator, there have been no studies examining the perpetrator relationships and assault characteristics using a holistic wellness model. While health and wellness can be connected, there is a generally accepted distinction between them. According to Ali et al. (2018), "Health is a state of complete physical, mental, and social wellbeing, and it is the absence of disease, while wellness refers to the state of living an optimally healthy lifestyle and wellness is more than healthcare" (p. 26660). A wellness model gives an overall view of functioning and wellbeing and has a long history associated with counseling. Thus, a wellness model may be more useful than a symptom-based

health model for clinicians and counselors working with survivors who could experience changes in well-being across different areas of their lives.

This study examined the association between perpetrator relationships and wellness outcomes as well as the impact of sexual assault characteristics on these associations. Since previous research on perpetrator relationships is mixed, no hypotheses were made prior to analyses regarding survivor-perpetrator relationships and wellness. However, regarding the influence of sexual assault characteristics, based on the extant literature, three hypotheses were made about each characteristic: (1) more severe sexual assault would be associated with adverse wellness, (2) assault by a male perpetrator would be associated with adverse wellness, (3) being a female survivor would be associated with adverse wellness.

CHAPTER 2: METHODS

Data Source & Sample

This project is a secondary data analysis using data from the Behavioral Risk Factor Surveillance Survey (BRFSS; Centers for Disease Control and Prevention, 2013b). The BRFSS is a national, telephone survey conducted annually used to collect cross-sectional, state-level data on U.S. adults in states and territories about health-related risk behaviors, chronic health conditions, and use of preventative health services. The earliest data was collected in 1984 from 15 states. The most recent data has information on more than 400,000 individuals in 50 states, the District of Columbia, and three U.S. territories. Adults aged 18 and older were surveyed and were not compensated for their contribution. The survey is composed of fixed core questions (asked every year), rotating core questions (asked every other year), and optional additional modules (Centers for Disease Control and Prevention, 2014). The BRFSS has an optional Sexual Violence (SV) module that includes information on type of sexual assault, whether the assault happened within the last year, the survivors' relationship to their perpetrator, and the sex of their perpetrator. SV data became available in 2005 and ended collection in 2007 but it is unclear why it was first included and why collection was stopped soon after (Centers for Disease Control and Prevention, 2013a, 2013b, 2013c, 2013d). This secondary analysis will focus on the latest SV data collected in 2007 to better reflect current trends of sexual violence. In 2007, the SV module was included by Hawaii, Idaho, Massachusetts, Montana, Nebraska, Virginia, and Puerto Rico.

Individuals were included in the analysis if they indicated they had survived lifetime sexual assault. Lifetime sexual assault was assessed from two questions inquiring about the survival of attempted or completed rape during the lifetime ("Has anyone EVER had sex with

you after you said or showed that you didn't want them to or without your consent?", "Has anyone EVER ATTEMPTED to have sex with you after you said or showed that you didn't want to or without your consent, BUT SEX DID NOT OCCUR?"). The BRFSS also asks about other forms of sexual assault including unwanted sexual touching and sexual harassment. However, these were not included for analysis since the questions only ask about their occurrence within the last 12 months rather than lifetime experiences. After the elimination of participants who refused the sexual assault questions or did not know how to answer the questions, the final sample included 1,477 male and female survivors of sexual assault. The BRFSS did not ask about survivor gender, nor did it specify if the investigator or respondent indicated the survivor's sex. The BRFSS questionnaire simply states, "indicate sex of respondent". Thus, this study presumes that this is the respondent's sex assigned at birth, but no inferences can be made whether survivors identified with this sex assignment.

Variables

Survivor-Perpetrator Relationship Variables

The BRFSS assesses survivor-perpetrator relationship with one question ("Think about the time of the most recent incident involving a person who had sex with you -or- attempted to have sex with you after you said or showed that you didn't want to or without your consent? What was that person's relationship to you?"). The complete list of relationship options is detailed in Table 1. Survivors who answered, "Don't know/Not sure", "Multiple perpetrators", or who refused the question were eliminated from analysis. Due to the high number of categories and the uneven distribution of relationships in the dataset, variables were either eliminated due to low frequencies or kept and recategorized in a way like previous research (Culbertson et al.,

2001; Lawyer et al., 2006; Martin et al., 2008). Table 2 shows the recategorization of perpetrator relationship variables.

Table 1

Original BRFSS Perpetrator Relationship Options

Question: Think about the time of the most recent incident involving a person who had sex with you –or– attempted to have sex with you after you said or showed that you didn’t want to or without your consent? What was that person’s relationship to you?

Current boyfriend/girlfriend	Parent
Former boyfriend/girlfriend	Stepparent
Fiancé	Parent’s partner
Spouse or live-in partner	Parent-in-law
Former spouse or former live-in partner	Other relative
Someone you were dating	Neighbor
First date	Co-worker
Friend	Other non-relative
Acquaintance	Multiple perpetrators
A person known for less than 24 hours	Don’t know/Not sure
Complete stranger	

Table 2

Recategorization of Perpetrator Relationship Variables

Original Variables	Recategorization
Current boyfriend/girlfriend	<i>Current romantic partner</i>
Fiancé	
Spouse or live-in partner	
Former boyfriend/girlfriend	<i>Former romantic partner</i>
Former spouse or former live-in partner	
Someone you were dating	
First date	
Friend	<i>Friend</i>
Acquaintance	
Parent	<i>Relative</i>
Other relative	
A person known for less than 24 hours	<i>Stranger</i>
Complete stranger	

Sexual Assault Characteristic Variables

Three sexual assault characteristics will be included in the model to test moderating effects on the associations between perpetrator relationships and wellness outcomes in survivors: (1) *type of sexual assault*, (2) *perpetrator sex*, and (3) *survivor sex*. Although they are expected to moderate the associations between perpetrator relationships and wellness outcomes, direct associations of these characteristics and wellness outcomes will also be tested to check for other patterns in the data.

Based on the lifetime sexual assault questions, survivors were classified as having survived attempted rape (less severe), completed rape (more severe), or both attempted/completed rape (most severe), consistent with previous literature (Pegram & Abbey, 2019; Turchik, 2012; Turchik & Hassija, 2014). The BRFSS collected information on *perpetrator sex* with a follow-up question to the relationship question (“Was the person who did this to you male or female?”). Survivors were also given the option to answer, “Don’t know/not sure” or to refuse the question; however, these respondents were eliminated from this analysis. As previously mentioned, the BRFSS collected information on *survivor sex* but did not collect information on gender.

Control Variables

Control variables for this study included participant *age* (“What is your age?”), *employment status* (“Are you currently [employment status]”), and *health insurance* (“Do you have any kind of health care coverage, including health insurance, prepaid plans such as HMOs, or government plans such as Medicare?”). Controlling for *age* allows for results to reflect adverse wellness outcomes that are not due to natural aging. Controlling for *employment status* and *health insurance* accounts for access or lack of access to consistent income and healthcare,

both factors that can affect long-term wellness. This study intended to control for race and ethnicity as well, but unfortunately there were very few survivors with such data. Due to lack of data, the decision was made to eliminate these variables.

Outcome Variables

For this project, wellness outcome variables will include: (1) overall health status (i.e., *general health*), (2) number of physically unhealthy days in the last 30 days (i.e., *physical health*), (3) number of mentally unhealthy days in the last 30 days (i.e., *mental health*), (4) poor health-related quality of life in the last 30 days (i.e., *health-related quality of life*), and (5) missed days of work in the 30 days (i.e., *missed days of work*). All outcome variables were based on one question each which is consistent with how the BRFSS has been analyzed previously (Choudhary et al., 2008; Choudhary et al., 2010; Crisanti et al., 2011). Overall health status is an ordinal variable rated on a scale of one to five. Participants rated their health as excellent (i.e., one), very good (two), good (three), fair (four), or poor (five). The rest of the outcome variables are count variables for which participants indicated how many days in the last 30 days they experienced adverse *physical health*, adverse *mental health*, poor *health-related quality of life*, and *missed days of work*. Using standards set by previous researchers, survivors were considered to experience adverse wellness in the outcome variables if they indicated their general health was fair or poor as well as reporting 14 or more days in any of the count variables (Crisanti et al., 2011). Since count variables asked participants to report how many days they experienced adverse wellness, a greater number of days corresponds to an increase in adverse health across these variables.

Analysis

Path analysis with the lavaan package (Rosseel, 2012) in R software (R Core Team, 2020) was used to analyze a model of all outcomes, controls, predictors, and moderating variables. Figure 1 shows a simplified model of the path analyses tested. To test relationships, five regressions were performed within one model with each of the five wellness outcome variables regressed on all controls, predictors, and interaction terms. The initial model included all predictor variables followed by a model which added all interaction terms. Subsequent models were created by eliminating insignificant control, predictor, and interaction variables. Variables were eliminated in order of largest to smallest p -values over a 0.05 threshold. The final model consisted of significant controls, predictors, and interaction terms.

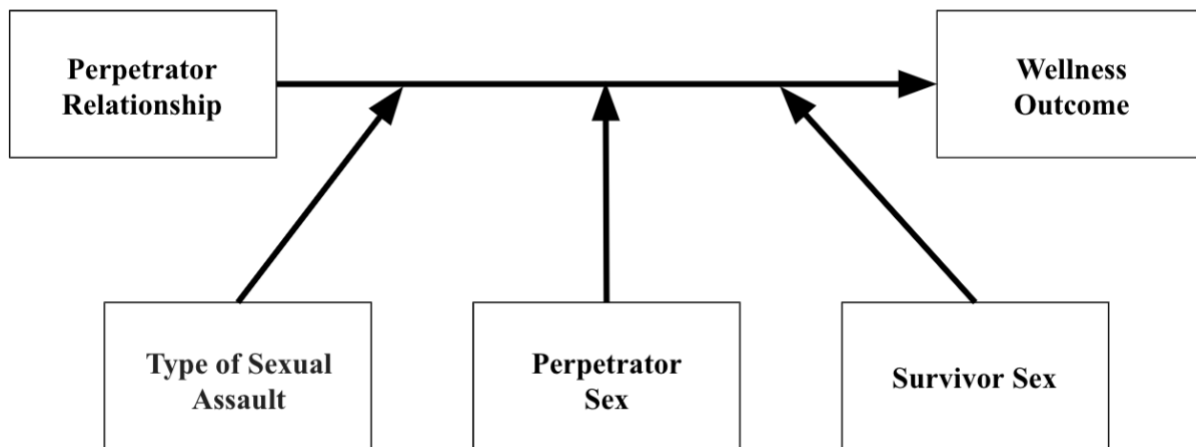


Figure 1. Simplified model representing the structure of the larger path analyses conducted with perpetrator relationships, sexual assault characteristics, and wellness outcomes.

Since the BRFSS was inconsistent in data collection across states, participants without data for certain variables were accounted for using full information maximum likelihood (FIML; e.g., Enders, 2010). The MLR estimator in lavaan was thus employed because it provided the parameter estimates obtained from FIML, and robust standard errors and chi-square statistic that were adjusted for data nonnormality (Satorra & Bentler, 2001). Model fit was assessed with

various fit indices including root mean square error of approximation (RMSEA; Steiger, 1990), comparative fit index (CFI; Bentler, 1990), and Tucker–Lewis index (TLI; Bentler & Bonett, 1980; Tucker & Lewis, 1973). Cutoff values of RMSEA less than 0.06, CFI greater than 0.95, and TLI greater than 0.95 were used to determine goodness of fit (Hu & Bentler, 1999). These fit measures were considered appropriate for continuous outcomes or ordinal variables with at least five data points (Rhemtulla et al., 2012).

All survivor-perpetrator relationships and sexual assault characteristic variables were dummy coded, as described in Table 3. An example to demonstrate the purpose of these dummy variables would be if *stranger* (a dummy variable created from the perpetrator relationship variable) significantly predicts a wellness outcome (e.g., *mental health*), then one would conclude that the *stranger* group and the baseline group (all other perpetrator relationships including *friend*, *current partner*, *former partner*, *relative*) differed in mental health. These dummy codes also made it possible to create meaningful interaction terms. Perpetrator relationships were used as the predictor variables while *type of assault*, *perpetrator sex*, and *survivor sex* were tested as moderating variables. Since these moderating variables were also dummy coded, they can be interpreted in a similar manner. For example, if *stranger* is moderated by the severity of the assault, such as *both attempted/completed rape*, when significantly predicting mental health, one can conclude that there is a group mean difference in mental health between *both attempted/completed rape* compared to its baseline group (other sexual assault types including *attempted rape*, *completed rape*).

Table 3
Name and Values of Dummy Variables

	Stranger	Friend	Relative	Former Romantic Partner	Current Romantic Partner
Friend	0	1	0	0	0
Relative	0	0	1	0	0
Former Romantic Partner	0	0	0	1	0
Current Romantic Partner	0	0	0	0	1
	Attempted Rape	Completed Rape	Both Attempted & Completed Rape		
Completed Rape	0	1	0		
Both Attempted & Completed Rape	0	0	1		
	Female	Male			
Male	0	1			

Note. For perpetrator relationships, *Stranger* is the baseline group. For Sexual Assault Severity, *Attempted Rape* is the baseline group. For Survivor or Perpetrator Sex, *Female* is the baseline group.

CHAPTER 3: RESULTS

Descriptive Statistics

Table 4 describes the final sample's perpetrator relationships and sexual assault characteristics separated by *survivor sex*. There was almost an equal proportion of survivors who had survived *attempted rape* (39.74%) and who had survived *both attempted/completed rape* (38.52%). Most male survivors survived *attempted rape* and most female survivors survived *both attempted/completed rape*. Most male and female survivors were assaulted by *friends* followed by *former romantic partners* for women and *strangers* for men. Consistent with previous research, most perpetrators of sexual assault were male (93.16%) while most survivors were female (87.75%). However, for male survivors there was almost an equal proportion of male perpetrators (52.49%) and female perpetrators (47.51%).

Table 4
Frequency of Perpetrator Relationships and Sexual Assault Characteristics

	<i>Female survivor</i> <i>n</i> = 1,296 (87.75%)	<i>Male survivor</i> <i>n</i> = 181 (12.25%)	Percentage of total survivors
<i>Current romantic partner</i>	188	14	13.68%
<i>Former romantic partner</i>	342	16	24.24%
<i>Friend</i>	490	99	39.88%
<i>Relative</i>	132	13	9.82%
<i>Stranger (baseline)</i>	144	39	12.39%
<i>Attempted rape (baseline)</i>	465	122	39.74%
<i>Completed rape</i>	294	36	22.34%
<i>Both attempted/completed rape</i>	546	23	38.52%
<i>Male perpetrator</i>	1,281	95	93.16%
<i>Female perpetrator (baseline)</i>	15	86	6.84%

Table 5 describes the control variables of the sample. Survivors ranged in age from 18 to 93 with a mean age of 46.51. The greatest proportion of respondents were employed for wages (47.46%) and had access to health insurance (85.10%). Other demographics of the final sample

that were not included in the analysis show while most of the participants did not provide their racial information, many participants sample identified as non-Hispanic (87.0%), were not veterans (93.91%), were married (40.76%), and had a 4-year college degree (39.88%).

Table 5
Means, Standard Deviations, and Frequencies of Control Variables

	<i>M</i>	<i>SD</i>		
			<i>n</i>	%
Age	46.51	14.11		
Employed for wages			701	47.46
Self-employed			153	10.36
Out of work for more than 1 year			29	1.96
Out of work for less than 1 year			49	3.32
Homemaker			144	9.75
Student			54	3.66
Retired			152	10.29
Unable to work			195	13.2
Access to health insurance			1257	85.1
Lack of access to health insurance			220	14.9

Finally, Table 6 demonstrates the proportion of participants who reported adverse wellness across outcome variables. Most survivors did not report adverse wellness but for survivors who did, there were similar proportions in male and female survivors across wellness variables. For both men and women, more survivors experienced adverse *general health* (28.86-28.73%) and *mental health* (28.63-30.39%).

Table 6
Frequencies of Reported Adverse Wellness

Wellness variable	<i>Female survivor</i> <i>n</i> = 1,296	<i>Male survivor</i> <i>n</i> = 181
<i>General health</i>	374 (28.86%)	52 (28.73%)
<i>Mental health</i>	371 (28.63%)	55 (30.39%)
<i>Physical health</i>	329 (25.39%)	37 (20.44%)
<i>Health-related quality of life</i>	243 (18.75%)	44 (23.31%)
<i>Missed days of work</i>	156 (12.04%)	26 (14.36%)

Path Analysis

Table 7 shows the initial main effects model with standardized regression estimates, standard errors, and *p*-values across the five wellness outcomes. The *completed rape* and *stranger* variables caused convergence issues in the direct effects model, precluding its interpretation. Thus, these variables were removed from the direct effects model and were tested before the final model after non-significant variables and interaction terms had been eliminated. Negative regression estimates in the model indicated that significant perpetrator-survivor relationships or sexual assault characteristics (e.g., *stranger*, *attempted rape*) experienced better wellness (e.g., better *mental health*, less *missed days of work*) compared to all other perpetrator-survivor dyads or sexual assault characteristics, (e.g., *current partner*, *former partner*, *friend*, *relative*, *completed rape*) in the model. However, “better” wellness should not be interpreted as survivors gaining any health benefit from their assault, rather the context of their assault was associated with greater post-assault wellness compared to other assault contexts. *Employment status*, *age*, and *health insurance* were included in the initial model as control variables. The initial main effects models showed good fit across fit indices with CFI = 0.999, TLI = 0.996 , and RMSEA = 0.012. Subsequent models included all interaction terms. The final model was determined by eliminating variables based on *p*-value, eliminating them in order of largest *p*-value to smallest.

Table 8 shows the final model with regression estimates, standard errors, and *p*-values. The model showed good fit across fit indices with CFI = 1.000, TLI = 1.004, and RMSEA = 0.011. In the final model, *age* was not significantly predictive of *health-related quality of life*. *Health insurance* was not predictive of *physical health*, *health-related quality of life*, or *missed*

Table 7
Results of Main Effects Model

Variables	Outcome Variable	β	SE	p
<i>Employment status</i>	<i>General health</i>	0.129	0.011	<0.001**
<i>Age</i>		0.008	0.002	<0.001**
<i>Health insurance</i>		0.196	0.078	0.012*
<i>Attempted rape</i>		-0.128	0.075	0.086
<i>Both forms of rape</i>		0.138	0.076	0.069
<i>Current romantic partner</i>		0.016	0.114	0.886
<i>Former romantic partner</i>		-0.228	0.100	0.022*
<i>Friend</i>		-0.204	0.094	0.030*
<i>Relative</i>		0.131	0.125	0.297
<i>Survivor sex</i>		0.067	0.107	0.536
<i>Perpetrator sex</i>		0.010	0.138	0.942
<i>Employment status</i>	<i>Mental health</i>	0.859	0.107	<0.001**
<i>Age</i>		-0.071	0.020	<0.001**
<i>Health insurance</i>		2.492	0.833	0.003**
<i>Attempted rape</i>		-1.746	0.724	0.016*
<i>Both forms of rape</i>		0.882	0.750	0.239
<i>Current romantic partner</i>		1.105	1.070	0.302
<i>Former romantic partner</i>		-0.351	0.944	0.710
<i>Friend</i>		-0.107	0.877	0.903
<i>Relative</i>		1.350	1.198	0.260
<i>Survivor sex</i>		0.527	1.108	0.634
<i>Perpetrator sex</i>		-0.809	1.431	0.572
<i>Employment status</i>	<i>Physical health</i>	1.109	0.107	<0.001**
<i>Age</i>		0.059	0.020	0.003**
<i>Health insurance</i>		0.101	0.722	0.888
<i>Attempted rape</i>		-0.846	0.684	0.216
<i>Both forms of rape</i>		0.638	0.695	0.359
<i>Current romantic partner</i>		-1.479	1.055	0.161
<i>Former romantic partner</i>		-1.815	0.938	0.053
<i>Friend</i>		-1.667	0.870	0.055
<i>Relative</i>		0.679	1.238	0.583
<i>Survivor sex</i>		-1.425	0.926	0.124
<i>Perpetrator sex</i>		-1.707	1.198	0.154
<i>Employment status</i>	<i>Health-related quality of life</i>	1.367	0.098	<0.001**
<i>Age</i>		-0.022	0.017	0.187
<i>Health insurance</i>		-0.279	0.647	0.666
<i>Attempted rape</i>		-0.298	0.606	0.623
<i>Both forms of rape</i>		0.651	0.609	0.285
<i>Current romantic partner</i>		-1.765	0.988	0.074
<i>Former romantic partner</i>		-2.298	0.881	0.009
<i>Friend</i>		-2.294	0.824	0.005
<i>Relative</i>		-0.359	1.070	0.737
<i>Survivor sex</i>		0.378	0.938	0.687
<i>Perpetrator sex</i>		-2.073	1.255	0.099
<i>Employment status</i>	<i>Missed days of work</i>	0.998	0.089	<0.001**
<i>Age</i>		-0.058	0.014	<0.001**
<i>Health insurance</i>		0.587	0.605	0.332
<i>Attempted rape</i>		-0.311	0.485	0.522
<i>Both forms of rape</i>		1.069	0.524	0.041*
<i>Current romantic partner</i>		0.209	0.823	0.800
<i>Former romantic partner</i>		-1.000	0.708	0.158
<i>Friend</i>		-0.873	0.690	0.206
<i>Relative</i>		0.126	0.886	0.887
<i>Survivor sex</i>		1.475	0.865	0.088
<i>Perpetrator sex</i>		-0.060	1.092	0.956

Note. *p < 0.05. **p < 0.01.

Table 8
Results of Main Effects Model

Variables	Outcome Variable	β	SE	p
<i>Employment status</i>	<i>General health</i>	0.129	0.011	<0.001**
<i>Age</i>		0.009	0.002	<0.001**
<i>Health insurance</i>		0.192	0.068	0.005**
<i>Attempted rape</i>		-0.181	0.052	0.001**
<i>Former romantic partner</i>		-0.211	0.062	0.001**
<i>Friend</i>		-0.188	0.057	0.001**
<i>Employment status</i>	<i>Mental health</i>	0.854	0.107	<0.001**
<i>Age</i>		-0.065	0.019	0.001**
<i>Health insurance</i>		2.238	0.710	0.002**
<i>Attempted rape</i>		-1.502	0.474	0.002**
<i>Relative</i>		-7.667	2.464	0.002**
<i>(Relative)x(Perpetrator sex)</i>		8.623	2.567	0.001**
<i>(Current partner)x(Both forms of rape)</i>		2.457	1.148	0.032*
<i>Employment status</i>	<i>Physical health</i>	1.110	0.107	<0.001**
<i>Age</i>		0.072	0.017	<0.001**
<i>Attempted rape</i>		-0.977	0.433	0.024*
<i>(Relative)x(Perpetrator sex)</i>		1.737	0.828	0.036*
<i>Employment status</i>	<i>Health-related quality of life</i>	1.353	0.096	<0.001**
<i>Current romantic partner</i>		-9.070	3.163	0.004**
<i>(Current partner)x(Survivor sex)</i>		7.282	2.768	0.009**
<i>(Current partner)x(Perpetrator sex)</i>		7.984	3.132	0.011*
<i>Former romantic partner</i>		-1.433	0.549	0.009**
<i>Friend</i>		-1.373	0.505	0.007**
<i>Perpetrator sex</i>		-1.725	0.771	0.025*
<i>Employment status</i>	<i>Missed days of work</i>	1.003	0.089	<0.001**
<i>Age</i>		-0.053	0.012	<0.001**
<i>(Current partner)x(Both forms of rape)</i>		1.919	0.917	0.036*
<i>(Former partner)x(Attempted rape)</i>		-1.020	0.459	0.026*
<i>(Stranger)x(Survivor sex)</i>		3.478	1.473	0.018*

Note. *p < 0.05. **p < 0.01. All predictors and interaction terms were dummy-coded. Relationship variables included *current romantic partners*, *former romantic partners*, *friends*, *relatives*, and *strangers*. Severity variables included *attempted rape*, *completed rape*, and *both attempted/completed rape*. *Survivor sex* and *perpetrator sex* both included males and females. Positive larger values of regression slope estimates correspond to more adverse wellness across variables.

days of work. There were also no significant direct or indirect relationships involving assaults by *strangers* or surviving *completed rape* as the type of assault.

General Health

Regarding *general health*, experiencing *attempted rape* ($\beta = -0.141$), the less severe form of assault in the study, was associated with better *general health* compared to *completed rape* and *both attempted/completed rape*. Meaning that more severe assault was associated with worse *general health*. This provided support for the first hypothesis which stated more severe assault would be associated with adverse wellness. Additionally, assault by a *former romantic partner* ($\beta = -0.210$), and assault by a *friend* ($\beta = -0.186$) were associated with better *general health* compared to all other perpetrator relationships (i.e., *current romantic partner*, *relative*, *stranger*). There were no significant moderation effects between perpetrator relationship variables and *general health*.

Mental Health

Surviving *attempted rape* ($\beta = -1.502$) was directly predictive of better *mental health* compared to other forms of assault (i.e., *completed rape*, *both attempted/completed rape*). This means that more severe forms of assault were predictive of worse *mental health* and provided further evidence for the first hypothesis. Additionally, there were two significant moderation effects between perpetrator relationships and *mental health*. First, the relationship between being assaulted by a *current romantic partner* and *mental health* was moderated by sexual assault type. Those assaulted by *current romantic partners* who survived *both attempted/completed rape* were associated with worse *mental health* ($\beta = 2.457$) compared to survivors of assault by current partners perpetrating other forms of assault (i.e., *attempted rape*, *completed rape*). This means that survivors of *current romantic partners* who experienced the most severe form of assault were associated with worse *mental health* and provided additional evidence for the first hypothesis. Second, the relationship between being assaulted by a *relative* and *mental health* was

moderated by *perpetrator sex*. Survivors who were assaulted by male relatives were associated with worse *mental health* ($\beta = 8.862$) compared to survivors assaulted by female relatives. This finding provided support for the second hypothesis, which stated that survivors of male perpetrators were likely to be associated with adverse wellness.

Physical Health

There was a significant direct relationship between *attempted rape* and *physical health* ($\beta = -0.977$). Like the relationships found between surviving *attempted rape* and *general health/mental health*, surviving the less severe type of assault was related to greater *physical health* compared to other forms of assault (i.e., *completed rape, both attempted/completed rape*). This indicated that more severe assault was associated with worse *physical wellness* and provided more support for the first hypothesis. There was also a significant indirect relationship between those assaulted by *relatives* and *physical health*. This indirect relationship was moderated by *perpetrator sex*, where being assaulted by a male relative was associated with worse *physical health* ($\beta = 1.737$) compared to survivors of female relatives. This provided further support for the second hypothesis.

Health-Related Quality of Life

Health-related quality of life was predicted by the most predictor variables and interaction terms out of the five total regressions in the model. Direct relationships were found between assault by a *former romantic partner* ($\beta = -1.433$) as well as assault by a *friend* ($\beta = -1.373$) and better *health-related quality of life* compared to all other perpetrator relationships (i.e., *current romantic partner, relative, stranger*). Additionally, a direct relationship was found between *perpetrator sex* and *health-related quality of life* ($\beta = -1.725$) which indicated that survivors with male perpetrators experienced better *health-related quality of life* compared to

survivors of female perpetrators. This finding provided contradictory evidence to the second hypothesis.

There were also two significant indirect relationships between perpetrator relationships and *health-related quality of life*. The relationships between being assaulted by a *current romantic partner* and *health-related quality of life* was moderated by two variables: (1) *survivor sex* and (2) *perpetrator sex*. First, male survivors ($\beta = 7.282$) in current romantic partnerships experienced worse *health-related quality of life* compared to female survivors in current romantic partnerships. This provided contradictory evidence to the third hypothesis which stated that female survivors were expected to display adverse wellness. Second survivors who were assaulted by male current partners ($\beta = 7.984$) were associated with worse *health-related quality of life* compared to survivors of female current partners. This finding supported the second hypothesis that male perpetrators would be associated with adverse wellness.

Missed Days of Work

Regarding the impact of assault on a survivor's work attendance, there were no significant direct relationships between perpetrator relationships and work attendance but several significant indirect relationships. First, the relationship between *former romantic partners* and *missed days of work* was moderated by *attempted rape*. Survivors of *attempted rape* by *former romantic partners* ($\beta = -1.020$) experienced fewer *missed days of work* compared to survivors of *former romantic partners* who perpetrated other forms of assault (i.e., *completed rape*, *both attempted/completed rape*). This indicated that more severe assault by *former romantic partners* was associated with greater *missed days of work* and provided support to the first hypothesis. Second, the relationship between *current romantic partners* and *missed days of work* was moderated by surviving *both attempted/completed rape*. Survivors of *both attempted/completed*

rape by *current romantic partners* ($\beta = 1.919$) experienced fewer *missed days of work* compared to survivors of *current romantic partners* who perpetrated other forms of assault (i.e., *attempted rape*, *completed rape*). This finding also provided support to the first hypothesis that more severe assault is associated with adverse wellness. Finally, there was a significant indirect relationship between being assaulted by *strangers* and *missed days of work*. This relationship was moderated by *survivor sex*, where male survivors of *stranger* assault experienced more *missed days of work* compared to female survivors of *stranger* assault ($\beta = 3.478$). This did not lend support to the third hypothesis of the study since male survivors showed greater adverse wellness compared to female survivors.

CHAPTER 4: DISCUSSION OF RESULTS & STUDY LIMITATIONS

With the growing prevalence of sexual assault in the United States, it is critical to further understand how sexual assault can affect the wellness of survivors. The purpose of this study was to examine the effects of perpetrator relationships and the sexual assault characteristics within those relationship using a holistic wellness model. Many of the findings from this study are consistent with prior research and provide evidence for two of the study's hypotheses. However, there were notable deviations from expected results worth examining.

Consistency with Prior Research

Survivor-Perpetrator Relationship

Due to mixed previous research, there were no hypotheses made in the present study about perpetrator relationships; however, there were several interesting patterns in the data. First, while every perpetrator relationship type was predictive of at least one wellness outcome, assaults by a *friend* or *former romantic partner* were directly or indirectly predictive of better *general health* and *health-related quality of life* compared to survivors assaulted by other types of perpetrators. Previous evidence suggests being assaulted by friends and former partners may lead to different conceptualizations of the assault and different health outcomes. In Ellis (1994)'s review of *acquaintance rape* (e.g., sexual assault by a known person) literature, survivors of acquaintance rape are less likely to label themselves as rape survivors, instead seeing the unwanted sex as a "bad experience," as well as believing common cultural rape myths that the sex was justifiable as not true rape (p. 11-12) Additionally, if a survivor knows their perpetrator, reporting the assault may have drastic consequences for their social life, reputation, or emotional well-being.

It could be possible survivors engage in self-protection by not fully integrating their experience as rape, instead labeling it as something less psychologically, socially, or emotionally damaging to them. A study on rape myth acceptance found female rape survivors who acknowledged their experience and endorsed a subscale called “She Wanted It” displayed greater depression symptoms than unacknowledged rape survivors who scored high on rape myth acceptance. Investigators posited these survivors are engaging in greater self-blame which has been linked to greater psychopathology. However, acknowledged rape survivors who had low levels of rape myth acceptance may engage in healthier coping strategies and seek greater help. These investigators concluded unacknowledged rape can either serve as a risk or a protective factor depending on the degree to which survivors accept rape myths (Wilson, Newins, & White, 2018).

In the present study, 39.88% of survivors were assaulted by friends and of survivors assaulted by former romantic partners, 18.62% were assaulted by former boyfriends, girlfriends, or fiancés. This is compared to the 5.62% of survivors who were assaulted by someone they were dating or a first date. It is possible that since these survivors were socially or intimately connected with their perpetrators, they may not have labeled their experience as rape to keep themselves or their assailants safe. It is possible if survivors considered their assaults as bad sexual experiences but not rapes, this could potentially have a lesser impact on their *general health* and *health-related quality of life* as they continued in their relationships.

It should also be considered that if not labeling the experience as rape can serve as a protective factor, many of these survivors may develop greater resilience after their assaults. Sexual assault researchers have explored the concept of posttraumatic growth (PTG) among survivors. Generally defined, PTG is positive psychological growth that survivors may

experience after enduring a traumatic or highly challenging event (Ullman, 2014). It would be reasonable to assume that some survivors experienced PTG regarding their chosen relationships. Survivors may have moved away from damaging friendships or romantic relationships or started caring for themselves in the way their former partners or friends could not. In a review of PTG literature, several studies found that some survivors developed a greater appreciation for life, increased quality and satisfaction in their personal relationships, greater personal strength, and increased sense of control over their situation (Ulloa et al., 2016). Unfortunately, the BRFSS did not collect data on survivors' perceptions of their assaults, so this discussion is speculative. Future research should seek to better understand these survivor-perpetrator dyads and survivor growth.

Assaults by strangers were only indirectly related to more missed days of work when the perpetrator was male. This perpetrator gender effect will be discussed in the following section, but it is worth examining the literature about the impact of stranger assault. Investigators noted that in a sample of 489 rape survivors, although those who had been assaulted by strangers were at higher risk for violent assault, they were at lower risk for repeated assault. Additionally, survivors of stranger rape were more likely to tell someone about their experience, to seek crisis services, to report to the police, to believe they should have sought therapy, and to view their experience as rape. Investigators noted disclosure occurred in 73% of stranger rape cases compared to 44% of acquaintance rape cases (Koss et al., 1988). Several studies have also found survivors assaulted by strangers have been attributed less blame and more support from their social networks (Abrahams et al., 2013; Abrams et al., 2003; Golding et al., 2002; Persson et al., 2018; Ullman, 2000). This may be due to rape myths and media depictions of sexual assault that focus on the "stranger-danger" misperception of assault that encourages rape myth acceptance

around the idea that stranger rape is “true rape” (Merken & James, 2020). It is possible survivors assaulted by strangers may be more likely to utilize their social networks, post-assault recovery resources, and attribute less blame to themselves for the assault which could help bolster wellness.

Finally, being assaulted by a relative or a current romantic partner was directly or indirectly associated with worse wellness across *mental health, physical health, health-related quality of life, and missed days of work*. Although the BRFSS did not collect information about the survivors’ assault perceptions, it is worth noting that *relatives* and *current romantic partners* would usually be considered high betrayal relationships. The Brief Betrayal Trauma Survey (BBTS) created by Goldberg and Freyd (2006) measures the levels of betrayal in different traumas. In their recommendations on how to score the BBTS, endorsing the item, “You were made to have some form of sexual contact, such as touching or penetration, by someone with whom you were very close (such as a parent or lover)” is considered a high betrayal trauma (Freyd, 2021). As outlined in the literature review of this study, high betrayal has been frequently associated with worse mental, physical, and social functioning (Edwards et al., 2012; Freyd, Klest, & Allard, 2005; Goldsmith et al., 2012; Klest et al., 2019; Ullman, 2007). Thus, while this study did not collect data on betrayal level, it is important to acknowledge that assaults by relatives and current romantic partners could reflect high levels of betrayal for survivors which could have influenced the development of adverse wellness.

It is possible that this adverse wellness was not seen with former partners due to the time of recovery since the assault. Time of recovery should also be considered in cases of assaults by relatives when adult abusers have greater access to a vulnerable child. However, as noted in the literature review, high betrayal CSA survivors often have long-lasting and severe psychiatric

symptoms after their abuse compared to low betrayal survivors (Edwards et al., 2012; Ullman, 2007). This could indicate that time for recovery may affect survivors differently depending on the age or context of the assault. The present study did not have data on the timing of survivor assault, only lifetime prevalence. Thus, future research should include the time of sexual assault experience as an additional context when examining impacts on survivor wellness.

Type of Assault

Consistent with previous literature, an increase in assault severity was associated with adverse wellness across three outcomes: *general health*, *mental health*, and *missed days of work*. Notably, the *completed rape* variable was not significantly predictive of any wellness outcome. *Attempted rape* showed a significant difference in directly predicting *general health* and *mental health* as well as indirectly predicting *missed days of work* when the survivor was assaulted by a former partner. These associations were negatively correlated which meant that survivors who survived the less severe type of assault experienced better wellness across these three outcomes. Since there was no significant difference between *completed rape* and *both attempted/completed rape*, this may indicate there is a threshold level of trauma that is associated with physically intrusive or penetrative rape compared to *attempted rape*. This is not to say that experiencing *attempted rape* is not traumatizing. In fact, this study and previous research show *attempted rape* has a predictive effect on wellness outcomes. However, the present study's results also demonstrated that survivors who experienced more severe assault experienced worse wellness across *general health*, *mental health*, and *missed days of work*.

It was also notable that sexual assault severity moderated the associations between relationships with current romantic partners and missed days of work as well as mental health. It was found that the most severe type of assault, *both attempted/completed rape*, was predictive of

decreased work attendance and decreased mental wellness. This provides further evidence that current intimate partner sexual violence (IPSV), especially involving more severe sexual assault, has an impact on survivors' daily functioning. This is consistent with previous literature regarding sexual assault's impact on mental health, career, and daily work. A qualitative study of women who had been assaulted in college found that long-term career impacts included loss of self-esteem, stalling of educational and career goals, not using their college degrees, feeling positions were not a good use of their skills, and failing to meet job expectations which included missing work regularly. Some participants reported that they missed work or showed up late to work due to mental or physical health problems from the assault. Others frequently changed jobs or left the workforce entirely due to the stress brought on by the assault (Potter et al., 2018). Another study of college women who had survived IPSV found that among multiple types of violence and controlling for depressive symptoms, sexual coercion was associated with lower confidence in their ability to engage in accurate self-appraisal, their ability to select goals, and their ability to problem solve for career decision-making challenges (Albaugh & Nauta, 2005).

Perpetrator and Survivor Sex

Based on previous literature it was hypothesized being assaulted by a male perpetrator would be associated with worse wellness outcomes, but this was only partially supported in the present study. Being assaulted by a male relative predicted worse *mental health* and *physical health* while being assaulted by a current male partner predicted worse *health-related quality of life*. These results are consistent with previous literature indicating that assault by male relatives and male current partners can have significant impacts on wellness.

Although there was no information collected on the timing of the assault, it is reasonable to assume many survivors abused by a relative experienced their assault during childhood when a

relative had increased access to them at a vulnerable age. Studies of childhood sexual abuse (CSA) have found that most CSA perpetrators are male and related to the child survivor (Hassan et al., 2015; Koçtürka & Yüksel, 2019). CSA, particularly in cases of incest, is a highly betraying form of abuse that can lead to long-term psychological consequences for survivors. A study of adult women who had been abused by brothers and fathers (in childhood and adulthood) found that across both groups there was a high threat of, or actual force, during the abuse. Of the survivors, 100% experienced depression as well as high rates for substance use (50-56%), eating disorders (80-93%), suicidality (80-87%) sexual promiscuity (47-67%), compulsive spending (40-67%), and traumatic flashbacks (53-73%) (Rudd & Herzberger, 1999). In a large review of CSA literature, one study found penetration from a father figure significantly relates to development of depression, anxiety, and low self-esteem (Mennen & Meadow, 1994 as cited in Tyler, 2002). A qualitative study of brother-sister incest survivors found commonalities among survivors including guilt or self-blame, depression, sexual dysfunction, and low self-esteem (Laviola, 1989). Although perpetration by a female relative can also have long-term psychological consequences, survivors have reported conflicting feelings of these perpetrators especially when the woman was a caregiver. Survivors may experience increased self-blame, greater denial to see a female caregiver as an abuser, and decreased reporting (Tsopelas et al., 2012).

Regarding those assaulted by partners, it was interesting that survivors who were assaulted by current partners experienced worse *health-related quality of life* when the perpetrator was male and worse *health-related quality of life* when the survivor was also male. Adverse wellness associated with a male perpetrator was consistent with previous research; however, it was hypothesized female survivors would show greater adverse wellness. While the

BRFSS did not collect data on sexual orientation, a cross tabulation revealed there were 14 male survivors assaulted by a current partner and 188 female survivors assaulted by a current partner. Of those survivors, two men were assaulted by male partners and 187 women were assaulted by male partners. In a review of intimate partner violence perpetrated in the U.S., rates for perpetration by male partners was three times that of female perpetrators and women were at greater risk for sexual victimization (Hamby, 2014).

Since there was just one female survivor assaulted by a female current partner, it would be reasonable to expect the sheer number of male perpetrators would moderate this relationship. However, it is notable this remained true considering the number of female perpetrators who assaulted men. Cross tabulations showed that of the two men who were assaulted by male perpetrators, one man survived *completed rape* while the other survived *both attempted/completed rape*. Thus, these survivors experienced a more severe form of rape compared to most survivors who experienced *attempted rape*. In a review of gender asymmetry in IPSV, previous studies have indicated that men often perpetrate a more severe or physically violent form of sexual assault while female perpetrators are likely to use sexual coercion and nonphysical tactics. Perpetration by men has also been associated with more severe short-term and long-term injurious consequences (Nguyen & Naugle, 2019).

It is reasonable to assume violence within a current, ongoing intimate partnership could lead to revictimization throughout the relationship which could influence *health-related quality of life*. Daily tasks may be impacted if the survivor is experiencing frequent assaults or feels uncomfortable/unsafe with their partner or in spaces they share with their partner (e.g., homes, apartments, bedrooms). A previous study utilizing the *Quality of Life Interview* found that compared to women without a history of sexual assault, female survivors reported less

satisfaction with general life, daily activities, social relations, safety, and financial adequacy (Surís et al., 2007). There is a noticeable gap in the literature addressing quality of life for male survivors, but it is reasonable to assume male survivors may experience many of the same issues. Additionally, if male survivors are experiencing increased sexual violence severity within their current relationships this could have greater consequences for their daily functioning. These results show that understanding gender differences in perpetration and victimization continues to be important for predicting survivor wellness. It also indicates greater attention should be paid to the unique experiences of male survivors in sexually violent intimate partnerships.

While perpetration by a male current partner was associated with worse *health-related quality of life*, there was a direct relationship found between female partners and worse *health-related quality of life*. This provided contradictory evidence for the second hypothesis. In this sample, most survivors were assaulted by male perpetrators but the proportion of female perpetration against male and female survivors is vastly different. Out of 1,296 female survivors only 0.39% were assaulted by female perpetrators compared to 47.51% of 181 male survivors. Thus, while female perpetration made up a small percentage of total perpetrators, there continued to be a significant prediction of worse *health-related quality of life*.

This finding may be due to the attribution of blame placed on survivors due to their perpetrator's sex. Studies of male sexual assault have found conflicting attributions of blame. One study found that male survivors were more likely to be blamed for the assault compared to female survivors and particularly true if their perpetrator was male (Rye et al., 2006). Another study comparing the blame placed on male and female perpetrators for male survivors found female perpetrators received more blame for the assault. However, investigators posited this was due to a clear reversal of sexual norms where the woman was acting as a sexual aggressor

(Gerber et al., 2004). A study of blame placed on the survivor, rather than the perpetrator, found men often experience more blame for the assault when the perpetrator's sex corresponded with the survivor's sexual orientation. In other words, heterosexual men were often blamed more for the assault when their perpetrator was female. Investigators concluded that this was likely due to the inaccurate assumption that heterosexual men always enjoy, or always consent to, sex with women (Davies et al., 2006).

Male sexual victimization of any kind challenges the idea of traditional masculinity that men are supposed to always protect themselves from harm. Additionally, female perpetration conflicts with the traditional gender expectation that all men identify with character traits like sexual aggression and dominance as well as the assumption that heterosexual men always want any form of sexual contact with women (Ayala et al., 2018). Considering this study's findings, it is possible female perpetration may lead to worse *health-related quality of life* due to more challenges to traditional masculinity and subsequent decreased access to resources or positive social support. This could also explain why male survivors displayed decreased work attendance when they were assaulted by a stranger. Decreased ability to access resources or discuss the experience of being physically overpowered by a stranger could impact the survivor's ability to return to daily tasks. Regarding female survivors of female sexual assault perpetration, Gerber and colleagues produced findings that women's attributions of blame are based on the participants' role in the assault rather than their gender. They found generally men are more likely to identify with sexual aggression, such as that enacted by a perpetrator, while women are more likely to identify with sexual victimization. In other words, women who were assaulted by female perpetrators blamed their perpetrator as much as they would with a male perpetrator and reported they would feel equally victimized (2004).

Overall, findings from this study as well as previous studies suggest a survivor's sex are associated with their *health-related quality of life* post-assault. This study was unable to include gender as a variable but based on previous research it is possible that for survivors whose gender identity corresponds with their sex assigned at birth, traditional gender roles and expectations could impact their experience of their assault and affect their wellness. Men may be battling cultural assumptions about their masculinity while women may internalize negative messages about their power in sexually exploitative situations. It would be reasonable to think women who see themselves as powerless after an assault or men who do not have access to adequate recovery resources may have diminished confidence or ability to perform daily tasks. It also provides evidence that male survivors may be experiencing increased adverse wellness in daily functioning, such as quality of life and career impacts. More research and resources should focus on understanding the daily impacts and attending to the needs of male survivors. Future research should also explore how adherence to traditional gender roles impacts a survivor's experience of their assault.

Study Limitations

This study had several limitations that should be considered when interpreting the results. The BRFSS is a publicly available dataset thus, this analysis was limited to the questions created by the Centers for Disease Control and Prevention for information on U.S. sexual violence. There was no opportunity to reach participants for further information. This presented a few problems for this study regarding data on sexual violence. The BRFSS did not collect information on when the participants experienced their assault. This would have been useful for differentiating childhood sexual abuse and adult sexual assault. The BRFSS also did not collect information on how many assaults the survivor had experienced. This could have strengthened

the analysis on sexual assault severity, as repeated victimization would be considered more severe. Furthermore, since there was no available data on multiple assaults, there was also no differentiation between multiple perpetrators. Regarding the survivors' relationship to their perpetrators, rather than indicating how many perpetrators of each category were involved in their assaults, participants were only given the option to select “Multiple Perpetrators”. Since this study was interested in predicting wellness outcomes from these relationships, the decision was made to exclude those who indicated multiple perpetrators as no distinction could be made between each perpetrator. Finally, the BRFSS did not collect information on survivors' perceptions of their experiences. As noted previously, this would have clarified how a survivor labeled their experience and their perceived closeness to their perpetrator.

It should also be noted that, in addition to limited questions on sexual violence, there was significantly less data collection on sexual violence compared with other modules of the BRFSS. As stated, the most recent collection of the sexual violence module was completed in 2007 by Hawaii, Idaho, Massachusetts, Montana, Nebraska, Virginia, and Puerto Rico. This data was chosen for analysis to best reflect current sexual violence trends in the United States and territories. However, since this data is greater than ten years old to date and represents a limited proportion of U.S. citizens, further research is needed to confirm the findings of this study.

This is especially important since there was limited demographic information on participants. As previously noted, there was no information collected on gender and it is unclear how many participants identify as non-binary, gender fluid, or transgender. There was also a significant proportion of survivors in this study who did not report their race. According to 2019 data from the U.S. Census Bureau, most states that were surveyed in 2007 are majority-White in population but most residents in the state of Hawaii (~78.3%) and the U.S. territory of Puerto

Rico (~99.0%) are citizens of color. Although this sample did not allow for distinctions to be made between survivors of color and White survivors, there is significant evidence in the literature showing survivors of color often experience increased victimization, sexual assault severity, and barriers to treatment (Alvidrez et al., 2011; Boykins et al., 2010; Coulter et al., 2017; Ullman & Brecklin, 2002). Based on the results of this study, it would be reasonable to assume such circumstances could be associated with greater adverse wellness outcomes for survivors of color. Thus, while this study adds further evidence to research on sexual assault and wellness, generalizations about the experience of survivors should be interpreted with caution. Further research is needed to examine differences in wellness among survivors of various gender, racial, ethnic, and cultural social identities.

CHAPTER 5: STUDY IMPLICATIONS & FUTURE DIRECTIONS FOR RESEARCH

As evidenced, there are several limitations to this research that limit the generalizability of the results. However, there are several important implications of this study that should be considered. First, to the knowledge of this investigator, this is the first study to examine the effects of perpetrator relationships and sexual assault characteristics using a wellness-based model. While studies like Choudhary et al. (2010) have utilized the BRFSS to examine adverse health outcomes and perpetrator characteristics, this is the first study using the BRFSS to examine multiple facets of wellness in one model. The wellness model allows for a holistic approach to survivor recovery by examining different elements of wellness in a survivor's life. It should be acknowledged that this study included *health-related quality of life* and *missed days of work* to reveal the daily and long-term effects sexual assault can have on a survivor's personal and interpersonal functioning.

Many studies thus far have focused on psychological recovery, but a wellness-model recognizes that mental health is only one element of survivor recovery. Expanding the research scope beyond specific symptoms can help survivors and clinicians create a plan for recovery that helps the survivor improve functioning across various areas of their life. While mental health clinicians and physicians should undoubtedly lend their expertise to mental and physical health, recommended treatments should consider the survivor's environment, social systems, and daily schedule. A wellness model encourages the survivor and clinician to examine multiple facets of wellness at one time to improve recovery. While focused interventions for specific areas of wellness are often needed, it is important to consider what other elements of the survivor's life could be affected. If key areas of wellness are being neglected this could slow or invalidate

certain interventions. When possible, psychotherapists working with survivors should collaborate with the survivor's physician to develop a treatment plan considerate of the survivor's physical health needs. Additionally, therapists should help the survivor identify adaptive coping mechanisms related to other forms of wellness such as physical therapy, exercise, diet, career counseling, and spiritual guidance.

Furthermore, this study provides evidence that sexual assault context matters, and treatment planning should be considerate of these contexts. Since there is evidence that different relationships, assault experiences, and survivor/perpetrator sex predict various adverse wellness outcomes, it is recommended mental health clinicians work with survivors to identify these contexts. Survivors can benefit from examining their relationship with their perpetrator and what this relationship means to them within the context of their environment. Survivors can also benefit from exploring gender and other social roles of themselves and their perpetrators within their cultural contexts. Clinicians can help survivors uncover what perceptions they have developed about themselves and their perpetrators (e.g., the endorsement of any common rape myths).

Due to the importance of relationships and sexual assault contexts on survivor wellness, survivors may benefit from psychotherapy directed at understanding these elements in depth. Specifically, psychodynamic and feminist therapies could prove useful for survivors looking to understand how these contexts have widespread implications for their wellness and recovery. Psychodynamic psychotherapy focuses on helping clients understand recurring themes and patterns over their life and throughout their relationships. This emphasis on relationships and interpersonal experiences can give survivors an opportunity to explore how their assault and relationship to their perpetrator may be impacting their psychosocial wellness in multiple areas

of their life. Additionally, the survivor can explore these personal and interpersonal patterns within a safe, nonjudgmental relationship with a therapist. The therapist approaches the survivor with warmth and empathy and encourages the survivor to gain a deeper understanding of these relationships for the survivor to develop a more adaptive relationship to themselves, the therapist, and other significant figures (Cowan & Ashai, 2020; Shedler, 2010).

Feminist approaches are rooted in a critique of sociocultural forces and place emphasis on skill development and empowerment. Survivors may be encouraged to challenge cultural myths about sexual assault including gender roles and survivor-blame. It can also be effectively used to understand the additional hurdles survivors of color may be facing due to racial/ethnic stereotypes and discrimination (Clemans, 2005). While feminist therapy conjures the association with female survivors, male survivors are likely to benefit from challenging similar systems. Male survivors often struggle with shame, embarrassment, anger, depression, fear, and sexual dysfunction after an attack that may interfere with their sense of masculinity or perceived gender role (Vearnals & Campbell, 2001). Like female survivors, male survivors deserve the opportunity to challenge systems and this process may look differently for men of different cultural backgrounds.

Finally, this study revealed several areas for future research on sexual assault characteristics and survivor wellness. More research is needed on how survivors of rape perpetrated by different types of perpetrators perceive their rape, label their rape, and how this rape affects their short- and long-term wellness. As seen in the present study, different perpetrator-survivor relationships and contexts were predictive of different adverse wellness outcomes. Thus, tailored resources built to address varied sexual assault contexts and wellness concerns will likely be more effective for survivor recovery. Such recovery interventions based

on sexual assault context and wellness needs should be tested in future studies. This study also suggests perpetrator sex and survivor sex have a significant impact on survivor wellness.

Particularly, more research is needed on which elements of female perpetration and being a male survivor are associated with adverse wellness outcomes. Lastly, these sexual assault contexts and wellness outcomes need to be further studied with a diverse group of survivors. This study was limited by data on racial, ethnic, and gender differences. Since context of sexual assault matters, it stands to reason differences in social identity groups, of survivors and perpetrators, will also influence survivor wellness and recovery.

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